

IVANOVA, N.N.

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6-72

"11-9. EFFECT OF THE CRYSTALLIZATION CONDITIONS ON THE PROPERTIES OF THE TRANS-
IENT LAYERS IN AUTOEPITAXIAL STRUCTURES OF GALLIUM ARSENIDE

Article by L. G. Lavrent'yeva, L. P. Perkhovichenko, L. V. Lyudin, L. N.
Kozall'nikov, N. N. Ivanova, Tatyana Novosil'tsk, III Simeonov po Pichashev
Boska I Stareza VOYKOVOYKOVOYKH Krlsallov I Plenok, Kurnian, 12-17 June,
1972, p. 97]

This paper is devoted to the discovery of the causes of the appearance
of transient layers in epitaxially grown GaAs. For this purpose a study was
made of the effect of the type of substrate, the surface quality and the crystal-
lization conditions in the initial stage of the process on the properties of
the transient region.

The epitaxial layers were grown in the Ga-AsCl₃-H₂ system. The process
was realized for ordinary preparation of the substrates and, in addition, the process
annealing and sea etching. The duration of the experiment varied from several
minutes to two hours. The uniformity of the distribution of the admixtures
with respect to thickness of the epitaxial layer was estimated by the birefringence
down voltage of the point contact on a low-angle section and by layer by
layer measurement of the Hall effect. The microtopography of the surface was
studied under an electron microscope.

By using the electron microscope, a new type of growth defect was dis-
covered. The density of these defects is connected with the method of treat-
ing the substrates directly before epitaxial growth. It was found that the
growth rate and the level of allowing the epitaxial layers depends on the den-
sity of these defects. By regulating the process conditions in the initial
stage of growth, the width of the transient region can be varied. Possible
mechanism of the formation of the transient layers are discussed. Possible

Acc. Nr: **AP0054067**

Ref. Code:

21 R 0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 4 , PP 65-71

THE TREATMENT OF ACUTE CHOLECYSTITIS

B. A. Petrov, E. I. Galperin, N. N. Ivanov

The authors analyze 1173 operations for acute cholecystitis and 100 repeated interventions. During the last years the number of aged and senile patients has risen sharply. Between 1960—1966 the number of operated patients over 60 years of age augmented by 40 per cent. The number of patients with a complicated course of cholecystitis with involvement into the process of the bile ducts, liver and pancreas. In operations at the peak of an attack of acute cholecystitis it is impossible to carry out a meticulous preoperative preparation and during the operation to explore the bile ducts. Such operations are attended by a high mortality and, frequently, by unsatisfactory remote results. Emergency operations should be performed only in manifestations of peritonitis. The majority of patients with acute cholecystitis should be operated 8—10 days after admission after the subsidence of acute manifestations.

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REEL/FRAME

19831164

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Burn Studies

USSR

IVANOVA, N. P.; YEVDOKIMOV, Ye. A.; SHEKHTER, A. B.; ISTRANOV, L. P.; RUDENKO, T. G.; SYCHENIKOV, I. A.; Central Scientific Research Laboratory imeni S. I. Chechulin, First Moscow Medical Institute imeni I. M. Sechenov, and Central Institute of Traumatology and Orthopedics.

"Application of Collagen Sponge in the Treatment of Burns"

Moscow, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya (News in Diagnosis, Treatment, and Prophylaxis of the Most Important Diseases and Methods of Investigation), Ministerstvo Zdravookhraneniya SSSR, 1971, 128 pp, pp 51-52

Abstract: Notwithstanding the large variety of materials and drugs used for the dressing and treatment of burns, to this date there is no generally accepted method of treatment. During the past few years information has appeared concerning the extensive utilization of collagen polymer preparations for the treatment of burns, trophic ulcers, scalp wounds, and so on,

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USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

which is absorbed by the organism and has a positive effect on the regenerative processes of the lesion.

The porous collagen sponges are hemostatically effective, and by their hygroscopic and structural properties securely protect the injured surface from the effects of the external environment, considerably reduce plasma loss, and contribute to the growth of granulation tissue and the rapid healing of the lesions. In addition, the collagen can be permeated with different medicinal substances (antibiotics, antiseptics, hormones, vitamins, substances stimulating the growth of connective tissue, and others) which are released by lysis of the collagen sponge.

Taking into consideration the positive properties of the collagen preparation, researchers at the Central Scientific Research Institute of Traumatology and Orthopedics Burn Section applied

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USSR

IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

a collagen sponge 0.5-0.8 cm thick and filled with boric acid, hydrocortisone, and furacillin to 20 patients with fresh burns and large granulation surfaces.

For the treatment of second and third degree burns, sponges corresponding in size to the injured areas were placed on the processed burned surfaces. Aseptic dressings were then applied. The dressings were changed within 2-3 days, and subsequently as required by the condition of the burned surface and the rapidity of lysis of the sponges. When applied to moist wound surfaces, the collagen sponges closely adhered to the wound, absorbing the lesion exudate. When exudation was copious, the sponges were absorbed by the second or third days.

The positive aspects of the application of collagen sponge are its rapid and painless covering of the burned surfaces, and the possibility of permeating the sponge with different medicinal substances which are able to exert a direct local effect on the

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IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

wound with lysis of the sponge. Collagen sponges can be recommended for use in the general set of therapeutic measures for the treatment of patients with burns as a temporary dressing for the preparation of large injured surfaces for subsequent autoplasty.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE EFFECT OF MEDIUM COMPOSITION AND GROWTH CONDITIONS ON FLAVIN
SYNTHESIS BY MYCOBACTERIUM LACTICOLUM 104 -U-
AUTHOR--(02)--MILKO, YE.S., IVANOVA, N.P.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 71-76
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MYCOBACTERIUM, CULTURE MEDIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1413 STEP NO--UR/0220/70/039/001/0071/0076
CIRC ACCESSION NO--AP0109475
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF CONCENTRATIONS OF CARBON, NITROGEN, PHOSPHORUS, IRON, POTASSIUM, MANGANESE, MAGNESIUM AND SURFACE ACTIVE SUBSTANCES AS WELL AS AERATION, TEMPERATURE AND PH OF THE MEDIUM WAS STUDIED ON THE YIELD AND TOTAL FLAVIN CONTENT DURING THE GROWTH OF MYCOBACTERIUM LACTICOLUM 104 IN THE MEDIUM WITH N-HEXADECANE. FLAVIN SYNTHESIS WAS ENHANCED WITHOUT ANY CONSIDERABLE CHANGES OF BIOMASS YIELD WHEN NITROGEN AND POTASSIUM CONTENT WAS INCREASED, THAT OF PHOSPHORUS, DECREASED AND THE INITIAL PH VALUE OF THE MEDIUM WAS SLOW. FLAVIN SYNTHESIS IN THIS MEDIUM RISED TWOFOLD.

UNCLASSIFIED

Acc. Nr:

AP0054656

IVANOVA

Ref. Code:

N.P.

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye,
1970, Nr 2, pp 39-44

**ANTIBIOTICS IN THE PROPHYLAXIS AND TREATMENT OF BACTERIAL
INFECTION IN TRAUMATOLOGIC AND ORTHOPAEDIC PATIENTS**

V. M. Mel'nikova, A. I. Gladshteyn, O. N. Markova, M. I. Moloss,
N. P. Ivanova, Z. G. Sirinova and V. V. Kuzmenko

Facts on the prophylaxis and treatment with antibiotics of infected wounds in traumatologic and orthopaedic patients based on clinical and laboratory data of 1110 are presented in the paper. In primary surgical wound debridement the authors prescribe penicillin with streptomycin or tetracyclin. It is stressed that the use of antibiotics in the so-called "clean" orthopaedic operations should be substantially limited and the demands of surgical aseptic enhanced. In purulent wound infection the staphylococcus and representatives of the intestinal group of microorganisms were the most common bacterial associations cultured. For the last year the appearance of staphylococcus in the microculture from the infected wounds increased. Various antibiotics, their combinations with each other, sulfanilamides or nitrofurane preparations, depending on the microflora sensitivity to them and concentration created in the focus of infection, are used in the treatment of purulent infection. The success of antibacterial therapy has been shown to depend on the rational use of antibiotics in complex with other methods of conservative and operative treatment and drugs which stimulate the organism reactivity.

REEL/FRAME

19831822

Acc. Nr: AP0054293

Ref. Code: ZIR 9115

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye,
1970, Nr 3 , pp 50-51

/ THE USE OF FIBRINOLYSIN IN THE TREATMENT OF FROSTBITES

N. P. Ivanova and N. A. Shesternya

Fibrinolysin has been applied by the authors with positive results in complex with other therapeutic measures in 5 patients with III—IV degree frostbites. The procedure of treatment is submitted.

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REEL/FRAME
19831431

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USSR

YUKHTIN, N. N., FURSENKO, I. V., IVANOVA, N. S., SELEZNEV, A. P., SHALINA, N. A.

"Synthesis of N-3,4-Dichlorophenyl-N'-hydroxyurea"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 59-65 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N546)

Translation: Experimental results are reported of the first stage in the synthesis of lynurone -- synthesis of N-3,4-dichlorophenyl-N'-hydroxyurea [I]. The relationship between the yield of I and the type of solvents has been investigated. Maximum yield of I has been achieved using the solvent system chlorobenzene-methanol-water 2:2:1. It has been shown that I is capable of reacting in two directions during its carbanoylation with 3,4-dichlorophenylisocyanate. NH_3 is passed through a solution of 8.61 g hydroxylamine sulfate in 60 ml water at 20° until pH of 7.4 is reached, MeOH is added, the reaction mixture cooled to 0-3°, 18.8 g of 3,4-dichlorophenylisocyanate in 121 ml ClPh is added, the mixture is left standing for 15 min., evaporated and filtered, yielding 20.6 g of 94% I.

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Antennas

USSR

UDC: 621.396.670.951

IVANCVA, N. S., BOGDANOV, A. A., MESROPOV, G. M., OGANOVA, L. A., ZUYEV, F. K., YEGOROV, Ye. M.

"A Fiberglass-Reinforced Polarization Material"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317137, Division H, filed 30 Sep 64, published 7 Oct 71, p 193

Translation: This Author's Certificate introduces a fiberglass-reinforced polarization material based on textolite for antenna reflectors. As a distinguishing feature of the patent, the weight of the reflector is reduced by adding to the glass-textolite reinforcement a layer of metallized glass fabric which contains metallized glass filaments in one of the directions of its structure (warp or weft). The glass filaments consist of elementary glass fibers coated with a layer of metal (aluminum or zinc) securely bonded to the glass fiber surface.

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1/2 C20 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE FUTURE OF RESIDENTIAL LIGHTING OF TODAY -U-

AUTHOR--(02)--BORSKIY, V.B., IVANOVA, N.S.

COUNTRY OF INFO--USSR

SOURCE--SVETOTEKNIKA (USSR), NO. 1, P. 3-7 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--VISIBLE LIGHT, LIGHT REFLECTION, LIGHT REFRACTION,
CONSTRUCTION ENGINEERING, GENERAL CONSTRUCTION, CONSTRUCTION INDUSTRY,
CONSUMER GOODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3C04/C125

STEP NO--UR/0311/70/000/001/0003/0007

CIRC ACCESSION NO--AP0130090

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APG130890

ABSTRACT/EXTRACT--(U) OP-3- ABSTRACT. DISCUSSES MODERN REQUIREMENTS OF RESIDENTIAL LIGHTING WITH DUE REGARD TO ITS DECORATIONAL VALUE, BASED ON THE WORK DONE AT CNILP, ON SETTING UP OF THE ENTRANCE ZONE, BATHROOM ZONE, ETC. RECOMMENDATIONS ARE GIVEN OF THE TECHNICAL CHARACTERISTICS OF THE LIGHTING OF THE ZONES AND ILLUSTRATIONS SHOWING POSSIBLE METHODS OF LIGHTING OF VARIOUS TYPES OF ROOMS. RECOMMENDATIONS ARE ALSO GIVEN DIRECTING THE NECESSARY FUTURE RESEARCH AND DEVELOPMENT WORK TO IMPROVE THE QUALITY OF LIGHTING OF MASS PRODUCED HOUSES.

ABSTRACT

1/2 045 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ON THE CHARGE COMPOSITION OF COSMIC RAY HEAVY NUCLEI WITH Z GREATER
THAN 26 -U-
AUTHOR-(03)-IVANOVA, N.S., KULIKOV, V.N., GAGARIN, I.F.

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY,
AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC
DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--COSMIC RAY, HEAVY NUCLEUS, EMULSION, MAGNETOSPHERE, SPACECRAFT
CARRIED EQUIPMENT/(U)ZOND 5 CIRCUMLUNAR PROBE, (U)SOYUZ 5 MANNED
SPACECRAFT, (U)COSMOS 213 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605061/B04 STEP NO--HU/2506/70/029/000/0391/0394

CIRC ACCESSION NO--AT014427

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144427

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. INVESTIGATION OF THE CHARGE COMPOSITION OF HEAVY PRIMARY PARTICLES WITH Z GREATER THAN 26 IN EMULSION STACKS EXPOSED ON SATELLITES AT AN ALTITUDE OF 300 KM (COSMOS 213 AND SOYUZ 5) AS WELL AS OUTSIDE THE EARTH'S MAGNETOSPHERE (ZOND 5). THE EXPOSED STACKS MAKE IT POSSIBLE TO INVESTIGATE THE IONIZATION OF HEAVY PARTICLES WITHIN A RANGE OF ABOUT 10 CM IN EMULSION. PRELIMINARY DATA ARE PRESENTED ON THE FLUX OF NUCLEI WITH Z GREATER THAN OR EQUAL TO 26 AND ON THE RELATIVE ABUNDANCE (WITH RESPECT TO THE FE GROUP) OF HEAVY PRIMARY PARTICLES WITH Z GREATER THAN OR EQUAL TO 30, Z GREATER THAN OR EQUAL TO 40, ETC. FACILITY: AKADEMIIA NAUK SSSR, FIZIKO-TEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 669.017.11.295.292

(4)

SHUSHKANOV, V. M., MOROZ, L. S., OBUKHOVSKIY, V. V., KAPITONOVA, N. P.,
IVANOVA, N. V., Leningrad

"Solubility of Vanadium in α Titanium"

Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 221-224.

Abstract: Considering that vanadium is one of the most important alloying elements used in the production of titanium alloys, this work attempts to establish the true limit of solubility of vanadium in α titanium. The paramagnetic susceptibility and modulus of elasticity of four alloys in the Ti-V system containing 0.50, 0.92, 1.40 and 2.30 wt. % vanadium were studied in various initial states. Methods were selected for high sensitivity to changes in electron structure of the alloys studied and interatomic bonding forces, hoping to record the initial stage of the formation of a second phase. The studies showed characteristic breaks on composition versus property curves of the alloys at 0.92 wt. % V, indicating changes in the interatomic bond energies and electron structure at this point. X-ray structural analysis showed that the breaks on the composition versus property curves correspond to appearance of the β phase. Thus, the equilibrium limit of

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USSR

Shushkanov, V. M., Moroz, L. S., Obukhovskiy, V. V., Kapitonova, N. P.,
Ivanova, N. V., Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 221-224.

solubility of vanadium in α titanium is not over 0.9 wt. % at 650-700° C.

USSR

UDC 535.568.1

IVANOVA, N. V., LEYKIN, M. V., Candidate of Sciences

"IG-86 Miniature Portable Polarimeter"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 7, Jul 71, pp 27-29

Abstract: A miniature portable polarimeter used to study the stressed state of objects using an optically sensitive coating is described. An optically sensitive or photoelastic coating is described as a coating sensitive to stress. It is noted that the absence of series-production of miniature portable polarimeters is holding back the development of optically sensitive coatings in the USSR. The IG-86 polarimeter developed by the authors shows the interference picture localized in the plane of optically sensitive coatings under conditions of both plane and circular polarization. The stressed state can be studied by observing the interference pattern and measuring the optical difference of the path both by the method of color comparison and by the compensation method. The difference in the major stresses is measured at the particular point of the object and the division of the major stresses is made by one of the existing methods. An optical diagram and specifications of the device are given. The dimensions of the device in the working position are 400 x 400 x 80 mm, the

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IVANOVA, N. V., LEYKIN, M. V., Optiko-mekhanicheskaya promyshlennost', No. 7,
Jul 71, pp 27-29

wight of the device itself is 3 kg and the weight of the battery is 2 kg.
Tests of the device in coal mines of the Kuzbass showed that the working model
satisfies the requirements imposed on a polarimeter intended for field studies.

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1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXTRACTION OF GLYCEROL FROM TAR OILS OBTAINED DURING THE
DISTILLATION OF FATTY ACIDS -U-
AUTHOR-(02)-IRODOV, M.V., IVANOVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 24-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FATTY ACID, GLYCEROL, SOLVENT EXTRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1576 STEP NO--UR/9085/70/036/002/0024/0025
CIRC ACCESSION NO--AP0118559
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0118559
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TAR OILS REMAINED AFTER DISTN.
OF FATTY ACIDS FROM 3RD CLASS BONE FAT WERE CLEAVED BY THE CONTACT
PROCESS OR THE RESISTANCE METHOD UNDER 25 ATM. WITH 100PERCENT BY WT. H
SUB2 O. THE LATTER METHOD GAVE 86.1PERCENT CLEAVAGE. THE GLYCEROL
WATERS OBTAINED WERE NEUTRALIZED WITH CA(OH) SUB2 AND EVAPD. WITH ADDN.
OF SILICONE AS ANTIFOAM AGENT, TO GIVE 88PERCENT CRUDE PRODUCT WITH
5-6PERCENT YIELD CALCD. FOR GLYCERIDES IN THE STARTING TAR OIL. THE
DISTN. GAVE A PURE PRODUCT CONTG. 97PERCENT GLYCEROL.

UNCLASSIFIED

USSR

IVANOVA, O.

"New Materials are Being Born in Scientific Laboratories"

Kommunist, No 241, 12 Oct 73, p 4, Cols 4-6

Abstract: Powder metallurgy is one of the new branches of science and technology. It permits creating new materials with a priori given properties as well as materials which can not be produced by other methods. The introduction of new powder materials is resulting in an economy of metal, a reduction in time needed for manufacture and cost of production, as well as an increase in life-time of the machine components.

The laboratory of the metal-ceramic components of the Armenian Scientific Research Institute of Machine Construction is occupied with development of new materials from powders, and the technology of manufacturing components for machines and other equipment from them.

Benches are equipped in the laboratory on which are displayed the machine components introduced in seven enterprises of the field. All told there are 46 of them. Below each which has its own documentation is given the name of the component, the material from which it was manufactured previously and the new composition powder material, the economy in metal, and the monetary effectiveness from its introduction.

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USSR

IVANOVA, O., Kommunist, No 241, 12 Oct 73, p 4, Cols 4-6

The Director of the Laboratory, Candidate of Technical Sciences, Al'fred Amayakovich Andreasyan, explains that ferrographite and bronze graphite, from which the majority of components have been manufactured, are successfully replacing bronze and babbite. The staff of our laboratory has also developed theoretically new anti-friction materials on a base of solid lubricants of sulfides, phosphides, and selenides. They have fully replaced the non-ferrous materials widely used in the production of sleeve bearings. The components manufactured from the new materials have been introduced in the Leninakansk Grinding Machine Plant, the Kirovakansk Precision Machine Plant, and the Yerevan Milling Machine Plant. Tests under industrial conditions once more proved their high reliability. The lifetime of the components was increased on the average by three-four times, and in certain instances by ten times. Let us take, for example, one of the most important components of a grinding machine, that is, the sleeve bearing. Previously it was made of bronze. The new composition powder material has not only replaced the non-ferrous

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USSR

IVANOVA, O., Kommunist, No 241, 12 Oct 73, p 4, Cols 4-6

metal but has indicated a great reliability in operation. The lifetime of the bearing has been increased by five times.

The investigators must solve a number of real technical problems in modern machine instrument industries. These include such problems as the replacement of cast high-speed steel with powder instrument materials which must increase the strength of the instrument by four-five times. For almost a year the laboratory staff has been conducting research, the results of which have confirmed the validity of the selected direction. The laboratory is also mastering the manufacture of non-porous powder components using the method of hot extrusion. The use of this method makes it possible to produce extra-strong materials.

Alfred Amayakovich says that many young investigators who are graduates of our institutes of higher learning are participating in the scientific research. The average age of the laboratory staff is 27 years. This to some degree is typical. This new branch of science is attracting youth with its unexplored possibilities. Our staff is working diligently to solve the problems presented to them. Many of the investigations have earned patents. We have made several applications for patents. Four of our graduate students are successfully completing their dissertation work.

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USSR

IVANOVA, O., KOMMUNIST, No 241, 12 Oct 73, p 4, Cols 4-6

As are all investigators, the laboratory staff is happy when a component of the material they have created has a start in life and goes into commercial production. The conditions for fruitful scientific research are excellent: a two-storied building, unique equipment, which permits conducting experiments at the modern scientific level.

The needs of machine instrument plants for components of powder materials are constantly increasing. However the question of their commercial production has not been resolved. And this largely retards their introduction. A partial solution to the problem will be the mastering of technological equipping the areas which is being worked on by the Leninakan Grindings Machine Plant and the Yerevan Experimental Plant. When these shops are equipped, the test-experimental base of the laboratories will be expanded and we can assume that the annual needs of the machine instrument plants of the republic for the components will be fully ensured. With construction of a powder metallurgy plant in Yerevan, production will be expanded and the introduction of scientific developments will be improved as suggested by commercial production.

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USSR

UDC 621.791.856:669.715

RABKIN, B. M., ~~IVANOVA, O. N.~~, STEBLOVSKIY, B. A., and BUDNIK, V. P.

"Straight-Polarized DC Welding of Aluminum Alloys"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 71-72

Abstract: Welding with straight polarized direct current is of significant interest from the point of view of increasing the fusion capacity of the arc and the possibility of forcing the welding conditions. It is necessary to remove sufficient oxides from the weld metal to obtain a high-quality joint during this welding process. This paper contains the results of an effort at the Institute of Electric Welding to achieve these goals when welding aluminum alloys by a straight polarized DC arc. Helium, argon, and their mixtures were used as shielding gases. It was found that straight polarized DC welding of aluminum alloys in helium without filler wire gives an even, bright surface. Good protection of the weld metal was insured by A-954 and A-1272 torches. High-quality welds were obtained with aluminum alloys 3, 8, 10, 15, and 20 mm thick in one pass without toe dressing.
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1/2 029 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--METABOLIC BREAKDOWN OF BENZO(A)PYRENE BY CELLS OF DIFFERENT MAMMALS
IN VITRO AND THE TOXIC EFFECT OF POLYCYCLIC HYDROCARBONS ON THESE CELLS
AUTHOR--(05)--BELITSKIY, G.A., VASILYEV, YU.M., IVANOVA, U.YU., LAVROVA,
N.A., PRIGOZHINA, YE.L.
COUNTRY OF INFO--USSR

SOURCE--VOP. ONKOL. 1970, 16(2), 53-8

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYDROCARBON, METABOLISM, TOXICOLOGY, CAT, CELL PHYSIOLOGY,
EMBRYOLOGY, LEUKOCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1986/1689

STEP NU--UR/0506/70/016/002/0053/0058

CIRC ACCESSION NU--AP0103455

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAT CELLS SENSITIVE TO THE TOXIC ACTION OF HYDROCARBONS ACTIVELY METABOLIZED BENZO(A)PYRENE (1). METABOLISM WAS SLOWER IN PIG AND CAT CELLS WHICH WERE MORE RESISTANT TO THE TOXIC ACTION OF 1 AND 7,12-DIMETHYLBENZ(A)ANTHRACENE. NORMAL EMBRYONIC FIBROBLASTS CELLS IN VITRO AND LEUKOCYTES FROM THE PERIPHERAL BLOOD OF HEALTHY HUMANS WERE ALMOST INSENSITIVE TO THE TOXIC ACTION OF THESE HYDROCARBONS AND METABOLISM OF 1 DEVELOPED MORE SLOWLY. THE SENSITIVITY OF CELLS TO THE TOXIC ACTION OF THE HYDROCARBONS SEEMS TO DEFINITELY CORRELATE WITH THEIR ABILITY TO METABOLIZE THESE COMPODS.

FACILITY: INST. EXP. CLIN. ONCOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

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BRAUN, M. P., ALAYNOVA, B. P., VINOGRAD, M. M., KATKUNSKI, M. M., KIL'CHEVSKAYA, T. V., and MILAY, A. Ye., Institute of Casting Problems, Academy of Sciences USSR

"Seam Zone Phase Composition of Complex Alloyed Steel"

Kiev, Avromaticheskaya Svarka, No 10, Oct 70, pp 1-5

Abstract: A description is given of experiments performed to clarify the nature of the processes responsible for the embrittlement of the material near a welding seam. These experiments involved quantitative chemical analysis of the oxide deposit precipitated after welding, as well as other products of thermal treatment. Specimens 10 mm in diameter and 100 mm in length were dissolved in the course of an hour in an electrolyte made up of 10 g of glucose and 100 g of ammonium chloride in 800 ml of water. The current density for the electrolysis was 0.03 a/cm². The composition of the precipitate was determined by x-ray diffraction with direct photography in cobalt or chromium radiation, checked by the microdiffraction method, and subjected to chemical analysis. For the detection of titanium carbide, the precipitate was boiled in a 0.5% solution of hydrochloric acid for five hours. Other details are given. It is concluded that the titanium and molybdenum carbides are not responsible for the embrittlement of the steel.

1/1

USSR

UDC: 681.3

ZOLOTAREV, Yu. G., IVANOVA, R. P.

"Detection and Correction of Errors in Weakly Positional Systems of Notation"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 4(30), pp 118-127 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V904)

Translation: The authors consider methods of constructing formulas of restitution in weakly positional systems of notation and use of these methods for detecting and correcting errors in data transmission and processing. Six theorems are proved in this connection. Illustrative examples are given. V. Mikheyev.

1/1

- 55 -

Acc. Nr: **AP0038106**

Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1,
pp 58-62

EFFECT OF FROST ON OXYGEN ABSORPTION BY POTATO LEAVES
TREATED WITH CHOLINE AND BETAINES ANALOGS AND DERIVATIVES

Ivanova, R. P.

Institute of Biology, Karelian Affiliate of USSR Academy of Sciences, Petrozavodsk

Bokarev, K. S.

K. A. Timiriazev Institute of Plant Physiology, USSR Academy of Sciences, Moscow

The effect of treatment of leaves with analogs and derivatives of choline and betaine on the respiration rate was studied in two potato species (*Solanum tuberosum* and *S. schreiteri*) subjected to frost. The respiration rate was higher in *S. tuberosum* plants treated with dimethyl- β -bromethylsulfonium and hydrochloric betaine than in the plants subjected to frost but not treated with the compounds. In *S. schreiteri* plants an analogous effect was obtained by treating with acetyl chloride and dimethyl- β -propiothetin HCl. It is suggested that the different efficiency of the compounds tested on the plants is due to differences in metabolism of quaternary ammonium compounds in the plants.

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1/3 023 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ADSORPTION OF IODINE AND CESIUM IONS ON MERCURY FROM SOLUTIONS IN
DIMETHYLFORMAMIDE -U-
AUTHOR-(03)-DOJLIDU, J., IVANOVA, R.V., DAMASKIN, B.B.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6(1), 3-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--IODINE, CESIUM, MERCURY, ADSORPTION, AMIDE, FORMIC ACID,
ELECTRODE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0433 STEP NO--UR/0364/70/006/001/0003/0008
CIRC ACCESSION NO--AP0107041
UNCLASSIFIED

2/3 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107041

ABSTRACT/EXTRACT--(U) GP-3- ABSTRACT. THE ADSORPTION OF I PRIME NEGATIVE AND CS PRIME POSITIVE IONS ON HG FROM VACUUM DISTO. DIMETHYLFORMAMIDE (DMF) SOLNS. WAS STUDIED BY MEASURING BOTH THE DIFFERENTIAL CAPACITY (WITH AN IMPEDANCE BRIDGE) AND THE INTERFACIAL TENSION (WITH AN ELECTROMETER) AS A FUNCTION OF ION CONC. AND POTENTIAL. TWO SOLNS. WERE EXAMD.; THE 1ST CONTAINED XM NAI PLUS $(0.5 \text{ MINUS } X) \text{M NACIO SUB4}$ WHERE X EQUALS 0, 10 PRIME NEGATIVE3, 10 PRIME NEGATIVE2, 5 TIMES 10 PRIME NEGATIVE2, 10 PRIME NEGATIVE1, AND 2 TIMES 10 PRIME NEGATIVE1 M; THE 2ND CONTAINED YM CSCIO SUB4 PLUS $(0.5 \text{ MINUS } Y) \text{M NACIO SUB4}$ WHERE Y EQUALS 0, 10 PRIME NEGATIVE2, 5 TIMES 10 PRIME NEGATIVE2, 10 PRIME NEGATIVE1, 2 TIMES 10 PRIME NEGATIVE1, AND 3 TIMES 10 PRIME NEGATIVE1 M.

THE DIFFERENTIAL CAPACITY CURVES SHOWED THAT NEITHER NA PRIME POSITIVE NOR CIO SUB4 PRIME NEGATIVE IONS WERE SPECIFICALLY ADSORBED AT LESS THAN 0.5M. THE CAPACITY OF THE HG ELECTRODE INCREASED WITH INCREASING CONC. OF I PRIME NEGATIVE AND CS PRIME POSITIVE; I PRIME NEGATIVE SHIFTED THE ELECTROCAPILLARY MAX. FROM SIMILAR TO 378 DYNES-CM AT 0.35 V FOR SOLN. I WHERE X EQUALS 0, TO SIMILAR TO 366 DYNES-CM AT 0.7 V FOR THE 1ST SOLN. WHERE X EQUALS 2 TIMES 10 PRIME NEGATIVE1 M NAI. THE SURFACE ACTIVITY OF I PRIME NEGATIVE WAS LESS AT THE HG-DMF INTERFACE THAN AT THE HG-WATER INTERFACE BECAUSE OF COMPETITIVE ADSORPTION BETWEEN I PRIME NEGATIVE ANIONS AND THE DMF SOLVENT MOLS. BUT THE SURFACE ACTIVITY (OR DECREASE IN INTERFACIAL TENSION AT AN UNCHARGED HG SURFACE) OF I PRIME NEGATIVE WAS ABOUT THE SAME AS IN N METHYLFORMAMIDE AND MDRF THAN IN FORMAMIDE.

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3/3 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107041

ABSTRACT/EXTRACT--THE CHANGE TO AN APROTIC SOLVENT CAUSED THE ANION TO BE LESS SOLVATED. SPECIFIC ADSORPTION OF CS PRIME POSITIVE BECAME NOTICEABLE ONLY AT A NEG. CHARGED ELECTRODE AND DID NOT LEAD TO AN OVERCHARGED ELECTRODE.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ZONE MELTING OF GALLIUM STUDIED WITH A MATHEMATICAL STATISTICAL
METHOD -U-
AUTHOR-(05)-IVANOVA, R.V., BELSKIY, A.A., RUZINOV, L.P., SLOBODCHIKOVA,
R.I., NOVIKOV, N.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 43-7
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ZONE MELTING, GALLIUM, ZINC, METAL EXTRACTING, STATISTIC
PROCESS, THERMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0171

STEP NO--UR/0370/70/000/001/0043/0047

CIRC ACCESSION NO--AP0054967

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEPN. OF GA FROM ZN BY ZONE MELTING WAS STUDIED WITH APPLICATION OF STATISTICAL METHODS FOR EXPTL. PLANNING. FOR THE ESTN. OF THE EFFECTIVENESS OF THE PROCESS THERMODYNAMIC, MATERIAL, ECONOMIC, AND TECHNOLOGICAL APPROACHES HAVE BEEN CONSIDERED. THE FINAL MATH. MODEL CORRESPONDS TO A SATISFACTORY DEGREE TO THE PROCESS OF ZONE MELTING OF GA. OPTIMAL VALUES OF EFFECTIVITY CRITERIONS AND THEIR CONNECTION WITH INDIVIDUAL FACTORS CONCERNED HAVE BEEN FOUND.

UNCLASSIFIED

USSR

UDC: 669.35'11'71:620.18

IVANOVA, S. I., MYULLER, N. N., PINCHUK, P. A.

"Distribution of Chromium, Manganese and Zirconium in Copper-Iron-Aluminum Alloys"

Moscow, Tsvetnyye Metally, No 12, Dec 73, pp 53-54.

Abstract: X-ray spectral microanalysis is used to establish that the copper matrix in cast Cu-Fe-Al alloys contains 7 to 12% Al, 1.6-3.0% Fe and approximately 1/2 of the manganese introduced to the alloy. In alloys with chromium, the copper matrix includes sections rich in chromium, but almost all the chromium is located in the iron phase, containing from 1.5 to 14.4% Cu and 10.3 to 13.0% Al.

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USSR

UDC 632.95

GOLYSHIN, I. M., MONOVA, V. I., KLIMKINA, L. P., IVANOVA, S. N., MEL'NIKOV, N. N., KHUSNETDINOVA, F. I., SHVETSOV-SHILOVSKIY, N. I., SAMYSHKINA, M. A., and BOLONINA, YE. I.

"An Antiseptic"

USSR Author's Certificate No 355008, Div B, filed 11 Jan 71, published 13 Nov 72 (from RZh-Khimiya, No 14, 25 Jul 73, abstract No 14N616 P by T. A. Belyayeva)

Translation: It is proposed that 4,5,6-trichlorobenzoxazolinone-2 (I) be used as an antiseptic for nonmetallic materials, and at the same time is a bactericide, which considerably extends the sphere of its action. Compound I is used in a 2-2.5% concentration to control mold, wood-rotting and wood-discoloring fungi.

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USSR

UDC 632.95

LUKANIINA, V. S., BEZUGLYY, S. F., MEL'NIKOV, K. N., IVANOVA, S. N., GOROKHOVA, V. V., KOSTYUKOVA, M. I., and KURBATOVA, T. I.

"Emulsifiable Concentrate of 5,4'-Dichlorosalicylanilide -- An Effective Molluscicide"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 61-65 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13K493 by I. Pil'menshteyn)

Translation: The use of 5,4'-dichlorosalicylanilide (I) in the form of a 10-percent emulsion concentrate (EC) increases its molluscicidal activity 8-9 fold over tha of an ammonia solution. I is 800-900 times more effective than CuCO_3 . At a $1:9.10^6$ dilution I provides 100% destruction of molluscs. In the applied concentration I is harmless for warm-blooded animals and grass cover. There is no change in the physicochemical properties and molluscicidal activity of the EC of I when it is stored in an airtight container for two years. The 10% EC of I is recommended for application in agriculture in doses of 1-5 kg/ha.

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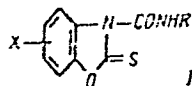
USSR

POZNANSKAYA, N. L., GOLOSKOVA, A. V., ~~IVANOVA, S. N.~~, SHVETSOV-SHILOVSKIY, N. I., and MEL'NIKOV, N. N.

"Method of Producing N-Carbamoylbenzoxazolin-2-thiones"

USSR Author's Certificate No 283987, filed 12/04/69, published 5/04/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 5N668P by L. V. Razbadovskaya)

Translation: Compounds with the general formula (I) (X=lower alkyl, H, halide, R=lower alkyl, alkenyl, aryl, substituted aryl) are produced by the reaction of the corresponding benzoxazolinthione with RNCO in the presence of a base in an organic solvent. Four drops of Et₃N and 10.4 g of MeNCO are added to a suspension of 18.6g 5-Cl-benzoxazolinthione in 150 ml dichloroethane, stirred for 20 hours at 20°, the solvent is distilled, producing 12 g I (X=5-Cl, R=Me) (Ia), yield 50%, mp 244-6° (Isooctane). I can be similarly produced (given are X, R,



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USSR

POZNANSKAYA, N. L., et al., USSR Author's Certificate No 283987, filed 12/04/69, published 5/04/71. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N668P by L. V. Razbadovskaya)

yield in %, mp in °C): H, Me (IB), 50, 97-8; 6-Cl, Me, 78.8, 216-8; 6-Cl, m-Cl C₆H₄, 84, 168-9; 5Cl, Ph (Ic), 78, 245-6; H, allyl, 60.5, 82-3; 5-Me, Me, 30, 135-6; 5 Me, m-ClC₆H₄, 74, 164. Under similar conditions but with boiling of the reaction mixture, the product is I (given are X, R, yield in %, mp in °C): H, m-ClC₆H₄, 68, 139-40; 5-Cl, m-ClC₆H₄, 70, 260-2. I has biological activity. Ia and Ic in concentrations of 0.005% are superior to phygone in their effects on Botrytis cinerea, Fusarium Moniliiforme, Venturia inaequalis, Aspergillus niger. Ia and Ib are effective seed disinfectants.

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- 70 -

USSR

UDC 632.95

BLINOVA, V. G., IVANOVA, S. N., KLIMKINA, L. G., SHVETSOV-SHILOVSKIY, N. I.,
and MEL'NIKOV, N. N.

"Method of Preparing 2-Oxo-3-chrysanthemoylhydroxymethylbenzoxazoline or
2-Thio-3-chrysanthemoylhydroxymethylbenzoxazoline"

USSR Authors' Certificate No 259891, filed 2 Aug 68, published 12 May 70
(from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N597P)

Translation: Compounds of the general formula $\text{C}(\text{---Y})\text{OCH}_3(\text{XNCH}_2\text{OCOCHCMe}_2\text{CHCH} \text{---CMe}_2$ [I; $\text{C}_6\text{H}_3(\text{X}) \text{---}$ substituted o-phenylene; $\text{X} \text{---}$ H, halogen; $\text{Y} \text{---}$ O or S] are obtained by the reaction of benzoxazolinones or benzoxazolinethiones with acid chloride of chrysanthemumic acid (II) in the presence of an HCl acceptor, e.g. $\text{C}_5\text{H}_5\text{N}$, at temperature 0-9° in an organic solvent or without it. Example. To a suspension of 0.01 mole 3-hydroxymethylbenzoxazolinethione in 10 ml anhydrous PhMe are added 0.04 mole $\text{C}_5\text{H}_5\text{N}$ with stirring and then, dropwise, at temperature 5-9° a solution of 0.01 mole II in 10 ml PhMe. The reaction mixture is stirred for 5 hr at $\sim 20^\circ$, after which $\text{C}_5\text{H}_5\text{N} \cdot \text{HCl}$ is filtered off. The solution is extracted consecutively with a 5% HCl acid solution, an NaHCO_3 solution, an NaCl solution, and dried over Na_2SO_4 . The solvent is distilled off in vacuum, and the residue is 1/2

USSR

BLINOVA, V. G., et al., USSR Authors' Certificate No 259891, filed 2 Aug 68, published 12 May 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N597P)

crystallized from heptane, to yield 2.9 g I (X=H, Y=S), melting point 91-2°. The following I's are synthesized (indicated here are X, Y, % yields, melting point, °C): H, 0, 90, 85-6 (heptane); 6-Cl, 0, 93, oil; 6-Br, 0, 91, 78-9 (heptane); 6-Br, 95, S, oil. Compounds possess high fungicidal activity.

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- 47 -

IVANOVA, S. P.

SO: JPRS 55100

4 FEB 72

UDC 613.693:616.981.25

DEVELOPMENT OF STAPHYLOCOCCAL INFECTION IN HUMAN SUBJECTS UNDER THE INFLUENCE OF SOME SPACEFLIGHT FACTORS

Article by R. A. Chukhlovskiy, P. P. Ostrovskiy and S. P. Ivanova

Kosmicheskaya Biologiya i Medicina, Russian, Vol 5, No 5, 1971, submitted for publication 27 June 1969, pp 61-65

Abstract: Healthy male test subjects exposed to extended bedrest, partial or complete isolation and inadequate personal hygiene were studied for the size of microbial foci in the nasal mucosa and pathogenicity of nasopharyngeal staphylococci. Most test subjects exhibited an increase in size of staphylococcal foci and an increased presence of staphylococci producing coagulase, hyaluronidase and leucine aminopeptidase. They also exhibited an increased level of antibodies to staphylococcal enzymes in the blood. The carrying of a main plasmotype was usually established in isolated groups of subjects. The possibility of mutual infection of human subjects by pathogenic staphylococci under the influence of certain spaceflight factors was demonstrated.

Among the problems involved in the medical support of prolonged space flights is the development of measures for the prophylaxis of autointoxications, especially staphylococcal infections.

It is known from the literature that a state of prolonged hypodynamia, a decrease in natural body resistance (O. C. Alekseyeva and A. P. Volkova; M. I. Kozat; G. P. Mikhailovskiy, et al.). In this way the prerequisites can be created for the activation of potentially pathogenic microflora (R. A. Chukhlovskiy and S. P. Ivanova).

An increase in the size of staphylococcal foci on the mucous membrane of the nose and in the pharynx can serve as an index of an increase in the activity of microorganisms. Their increase to levels exceeding the

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UDC 576.851.252.97.29.083.35

SMOL'SKAYA, T. T. and IVANOVA, S. P., Leningrad Medical Institute of Sanitary Hygiene

"Dynamics of Changes in the Toxigenic and Enzymatic Properties of Pathogenic Staphylococci in Tissue Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 91-95

Abstract: Eleven strains of pathogenic Staphylococci were passaged 25 times in HeLa and D-6 tissue cultures. Of 22 subcultures of the last passage, 19 produced more alpha-hemolysin and hyaluronidase than Staphylococci of the first passage. The production of lecithovitellinase increased in eight subcultures but remained unchanged in ten. Twenty subcultures of ten strains capable of releasing alpha-hemolysin retained this property after 25 passages. Of ten subcultures from five strains which produced beta-hemolysin on a solid medium, eight ceased to produce it under similar conditions in a liquid medium, while in 14 of 22 subcultures the titers of beta-hemolysin markedly decreased. All the strains that possessed delta-hemolysin were able to release it after passaging; three strains which previously did not elaborate this hemolysin were able to do

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USSR

SMOL'SKAYA, T. T., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 8, Aug 70, pp 91-95

so after passaging. The level of lecithovitellinase activity in most of the
passaged Staphylococci remained unchanged, while coagulase and hyaluronidase
activities increased. Hemagglutinating activity decreased after passaging in
ten of the 22 subcultures.

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- 14 -

USSR

UDC: 669.71.053.21

(2)

LEONT'YEV, L. I., MATYASH, V. G., DAVYDOV, A. D., KASHIN, V. V., UTKOV, V. A., IVANOVA, S. V.

"Reducibility of Highly Basic Bauxite Sinters"

Vosstanovimost' Vysokoosnovnykh Boksitovykh Aglomeratov [English version above], Sverdlovsk, 1973, 9 pp (Translated from Referativnyy Zhurnal Metal-lurgiya, No 8, 1973, Abstract No 8G155DEP, by the authors).

Translation: The extraction of moist limestone from blast furnace charges significantly improves the technical and economic indicators of the blast furnace process. The possibility is demonstrated of producing a bauxite sinter with basicity 6.0, allowing complete elimination of limestone in the process of blast furnace melting of bauxites, in order to produce a slag which can be used for the production of Al_2O_3 . The peculiarities of the reduction of the sinter of various compositions under equilibrium and kinetic conditions are studied. Reduction of bauxite sinter with basicity 1.3-6.0 under kinetic and equilibrium conditions has shown that as the basicity increases, reducibility improves. This agrees with the nature of the change of phase composition of sinters: as basicity increases, the content of difficultly reducible

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USSR

Leont'yev, L. I., Matyash, V. G., Davydov, A. D., Kashin, V. V. Utkov, V. A.,
Ivanova, S. V., Vosstanovimost' Vysokoosnovnykh Boksitovykh Aglomeratov,
Sverdlovsk, 1973, 9 pp.

hercynite decreases, while the share of more easily reducible ferrites and
aluminoferrites of Ca increases.

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USSR

UDC [537.226+537.311.33]:[537+535]

GAVRILOVA, N. D., NOVIK, V. K., KOPTSIK, V. A., and IVANOVA, S. V.

"Pyroelectric Study of the Behavior of Domain Structure in Triglycine Sulfate (TGS) and Rochelle Salt Crystals"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering: Collection of Scientific and Technical Works on Materials), 1970, vyp 8, pp 19-21 (from RZh-Fizika, No 10, Oct 71, Abstract No 10Y3612 from summary)

Translation: The authors investigated the formation of domain structure in TGS and BaTiO_3 crystals during phase transition under various electrical boundary conditions at the moment of crossing through the Curie point. The difference in the behavior of closed and open specimens is discussed from the viewpoint of domain topography and the presence of charged domain boundaries.

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USSR

VERNOV, S. N., IVANOVA, T. A., SOSNOVETS, E. N., TVERSKAYA, L. V., FEDOROVA, G. F.,
and KHOROSHEVA, O. V.

"Injection of High-Energy Electrons into the Inner Regions of the Magnetosphere
During a Magnetic Storm 29 October - 4 November 1968"

— Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 11, Nov 70,
pp 2270-2274

Abstract: Measurements of electron fluxes ($E > 250, 500, \text{and } 800 \text{ kev}$) made with the satellite "Molniya-1" [Lightning-1] during a magnetic storm are reported. The trajectory of the satellite was the following: apogee 39,600 km in the Northern Hemisphere, perigee 520 km in the Southern Hemisphere, inclination of orbit 65° , period of rotation ~ 12 hours. The data is compared with readings made at various ground stations during the same period. It was found that after a series of strong minor storms the intensity of electrons in the gap ($E_e > 250 \text{ kev}$) rose by more than a factor of 2. In a subsequent series of such disturbances, additional injection occurred and the front of the injected electrons moved closer to the earth. An

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USSR

VERNOV, S. N., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 11, Nov 70, pp 2270-2274

injection of electrons of higher energies in the region $L < 3$ was not as effective as for $L = 3$, and the spectrum here was softer. It is observed that these phenomena are closely associated with increased intensity of polar disturbances and in all probability are of great interest in understanding the dynamics of the magnetosphere as a whole.

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1/2 027
UNCLASSIFIED
TITLE--PYRAZOLES. LXIV. PROTONATION OF ANTIPYRINE ANALOGS -U-
PROCESSING DATE--18SEP70
AUTHOR--(05)-GRANDBERG, I.I., VINOKUROV, V.G., TROYSKAYA, V.S., IVANOVA, T.A., MOSKALENKO, V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 202-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PYRAZOLE, IR SPECTRUM, UV SPECTRUM, IONIZATION, PROTON, HETEROCYCLIC NITROGEN COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/1110
STEP NO--UR/0409/70/000/002/0202/0203
CIRC ACCESSION NO--AP0104508
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104508

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA IN CHCL SUB3 OR IN CRYST. STATE, UV SPECTRA IN H SUB2 O, MECH, OR CONCD. HCL, AND EPR SPECTRA IN ME SUB2 SO OR IN 3:1 O SUB2 O-D SUB2 SO SUB4 WERE RECORDED OF ANTIPYRINE ANALOGS (I, II). IONIZATION CONSTS. (PK SUBA) IN WATER WERE MEASURED FOR (I, II, R PRIME1 EQUALS PH, R PRIME2 EQUALS ME) (R PRIME 3, R PRIME5, X AND PK SUBA GIVEN): H, -, O, 2.42; -, H, O, 2.40; ME, -, O, 2.85; ME, -, S, 2.49; ME, -, SE, 2.64; ME, -, NH, 10.4; -, ME, NH, 10.6; -, ME, S, 2.29; -, ME, SE, 2.42, -, ME, O, 2.49.

UNCLASSIFIED

USSR

MOSKALENKO, Yu. Ye., IVANOVA, T. I., VAYNSHTEYN, G. B., ZELIKSON, B. B.,
KISLYAKOV, Yu. Ya., and KAS'YAN, I. I.

"Resistance of the Cerebrovascular System to Transverse Accelerations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya No 1, 1973,
pp 37-46

Abstract: Histological examination of brain sections from dogs subjected to transverse accelerations of 15 g or more for 30 to 40 seconds revealed pronounced morphological changes in the blood vessels, including rupture of the walls with extensive hemorrhages into the brain tissue and ventricles. Intracranial cerebrospinal fluid pressure increased to 15 to 20 g and then stabilized while blood pressure continued to grow in proportion to the intensity of acceleration. Study of a mathematical model of the process showed that after acceleration of up to 15 g, transmural pressure in the cerebral vessels does not change significantly. However, acceleration of over 15 g increases transmural pressure beyond the tensile strength of the vascular walls and may cause them to rupture. Thus, the resistance of the cerebrovascular system to transverse accelerations is dependent on the relationship between the strength of the structural components of the vascular wall and the increase in transmural pressure.

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IVANOVA, T. I.

space physiology

SO: 34K5 54396

UDC 616.133.33-091-02:612.047:531.113

MORPHOLOGICAL CHANGES IN THE CEREBRAL VASCULAR SYSTEM INDUCED BY INVERSE ACCELERATIONS

(Space Physiology)

[Article by T. I. Ivanova, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 4, PP 86-88, 1971, submitted for publication 4 August 1969]

In further developing the investigations made by a number of authors (V. P. Kuznetsov, V. P. Kurkovskiy, 1953, 1954; A. S. Barot, I. M. Khazen, et al.; Petrukhin, et al.; B. S. Lushkov, and others) we made a morphological analysis of the condition of cerebral vessels in dogs after repeated, cumulative exposure to "inverse" accelerations of great intensity.

The experiments were made on 20 dogs weighing 7-10 kg under morphine-ketubal narcosis. The animals were subjected to increasing intensities of "inverse" accelerations in the range from 20 to 40 g inclusive on a centrifuge with a radius of 4.75 m. The duration of each exposure was 80 seconds; the interval between them was 8-10 minutes. Upon termination of rotation the animals were immediately brought out of their experimental state by the intravenous injection of morphine. Parts from different sections of the brain were fixed in formalin and Bouin's fluid. Paraffin sections 7-10 μ thick were stained with hematoxylin-eosin, chrome hematoxylin by the Gomori method, and by paraldeyde-fuchsin in the method modified by Daban.

A macroscopic examination of the brain revealed considerable congestion in the veins of the dura mater, the cerebral tissue was highly edematous, and the surface veins were engorged. The surface arteries were very anemic and in some segments the arteries in the circle of Willis were obliterated and spastic. Bloody cerebrospinal fluid flowed from the ventricles when the brain was sectioned. The brain surface exhibited impression marks from adjacent cranial bones.

In a microscopic study the arteries of the pia mater and vascular plexi were anemic and spastic. The entire extent of the cerebral vascular channel exhibited the following structural changes: a) the inner elastic membrane of the brain base, pial, radial and fine arteries were aneurysmally distended and frayed and it was frequently detached from the adjoining muscle layer; b) the muscular tunic was highly edematous, the muscle strands were separated

1/2 011 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--CONFORMATIONS OF MEDIAN DEPSIPEPTIDE RINGS. II. VIBRATIONAL SPECTRA
AND DIPOLE MOMENTS -U-
AUTHOR--(05)-ANDREYEVA, L.I., IVANOVA, T.M., YEFREMOV, YE.P., ANTONOV,
V.S., SHEMYAKIN, M.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHC. KHIM. 1970, 40(2) 475
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, DIPOLE MOMENT, EXCITED STATE, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1415

STEP NO--UR/0079/70/040/002/0475/0480

CIRC ACCESSION NO--AP0112409

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112409

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF 3 KNOWN
DEPSIPEPTIDES AND THEIR DIPOLE MOMENTS SHOWED THAT THESE 10, 11, AND 12
MEMBERED RING SYSTEMS EXHIBIT VARIATION OF CIS TRANS FORMS THAT DEPENDS
ON RING SIZE AND SUBSTITUENT STRUCTURE. IN THE 10 MEMBER RING THE
CONFORMATIONS REALIZED ARE THOSE FAVORING INTRAMOL. INTERACTION OF AMIDE
AND ESTER GROUPS AND THE POSSIBILITY OF TRANSANNULAR INTERACTION IS
REALIZED IN THE EXCITED STATE; THESE EFFECTS ARE MUCH WEAKER IN THE
LARGER RING SYSTEMS. THE DIPOLE MOMENTS OF THESE PEPTIDES RANGE FROM
3.4D TO 4.9D.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CATALYTIC FUNCTIONS OF CHLOROPLAST PEROXIDASES -U-
AUTHOR--(03)-IVANOVA, T.M., RUBIN, B.A., DAVYDOVA, M.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(1), 214-17
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VEGETABLE CROP, CHLOROPLAST, ENZYME ACTIVITY, MITOCHONDRION,
PLANT CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1264 STEP NU--UR/0020/70/190/001/0214/0217
CIRC ACCESSION NU--AT0109348
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0109348

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CHLOROPLASTS ISOLATED FROM THE LEAVES OF 60-70 DAY OLD CUCUMBER, RADISH, AND CABBAGE SPROUTS OXIDIZED PHLOROGLUCINOL AND EXHIBITED PEROXIDASE ACTIVITY. IN THE PRESENCE OF LIGHT BOTH PEROXIDASE AND PHLOROGLUCINOL OXIDASE ACTIVITY WERE STIMULATED IN THE CHLOROPLASTS BUT NOT IN THE LEUKOPLASTS AND MITOCHONDRIA. CHLOROPLAST PEROXIDASE SEEMS TO PARTICIPATE IN ASSIMILATION OF LIGHT ENERGY BY THESE ORGANIDS, BUT THE EXACT MECHANISM IS NOT YET CLEAR.

FACILITY: INST. BIOKHM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

Physiology

USSR

UDC 591.105+612.8.015+612.822.1

IVANOVA, T. N., and RUBEL', L. N., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Pyridine Nucleotides of the Cerebral Hemispheres in Rats Under the Influence of Hyperoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 240-242

Abstract: The effect of hyperoxia on the content of four forms of pyridine nucleotides NAD, NADH, NADP, and NADPH, was studied in the brain tissue of rats under conditions of hyperoxia. Also the role played by hyperoxia in the development of epileptiform spasms as pressure begins to exceed 4-5 abs. atm. was studied. Westar rats were sacrificed by immersion in liquid oxygen. The cerebral hemispheres were rapidly excised and reduced by trituration in liquid oxygen to a fine powder. A preparation containing 400-500 mg of the tissue extract with 10% trichloroacetic acid in 0.005 M solution of ethylenediamine tetraacetate was used to determine the content of oxidized NAD and NADP in brain tissue, while an alkaline preparation also containing 400-500 mg of brain tissue extract was used to determine the tissue content of NADH and NADPH. The oxidized and reduced forms of the pyridine nucleotides were determined by utilizing the highly sensitive enzymatic method of Slater and

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USSR

IVANOVA, T. N., et al, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971,
pp 240-242

associates, with modifications related to the method of tissue extract derivation. Studies showed that during hyperoxia, at a pressure of 7 abs. atm., the NAD content in brain tissues increases by about 20%, with a corresponding decrease in NADH content. No shifts occur in tissue content of NADP, although a slight decrease in the content of NADPH is noted. No explanation for the development of spasmodic conditions in hyperoxia can as yet be provided.

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USSR

UDC 535.215.12+621.382.28

LITOVCHENKO, V. G., SERBA, A. A., GORBAN', D. N., NOSKAL', D. N., IVANOVA, T. P.,
TRACHIK, V. P., PROKUROV, A. V.

"Use of an Optoelectronic Converter based on a Metal-Dielectric-Semiconductor
Photovaricap in a Dosimetric Device"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 108-113

Abstract: A study was made of the basic characteristics of a new type of semiconductor voltage modulator using a surface metal-dielectric-semiconductor photovaricap as the active element. The theoretical analysis of the physical phenomena determining the operation of the MDS photovaricaps and also some experimental results of studying their characteristics were presented previously [V. G. Litovchenko, et al., Elektronnaya tekhnika, Series 2, No 1, 96, 1967; V. G. Litovchenko, et al., Radiotekhnika i elektronika, Vol 12, No 1, 76, 1967].

An optoelectronic modulator of constant and low-frequency voltages from high-resistance sources was developed on the basis of an MDS photovaricap and a light diode. The modulator is characterized by high-frequency parameters (10^5 - 10^7 hertz), high input impedance ($> 10^{12}$ ohms), small size and weight. Experimental data were obtained which illustrate the operation of the MDS photovaricap in the optoelectronic modulator, in particular, combined with the

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JSSR

LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 108-113

ionization chamber. The application of these optoelectronic modulators permits an increase in their modulation frequency by several orders (by comparison with mechanical dynamic capacitors) and, therefore, use of ordinary alternating voltage amplifiers instead of electrometric input cascades.

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USSR

UDC 535.215.12+621.382.28

LITOVCHENKO, V. G., SDRBA, A. A., GOREBAN', D. N., MOSHAL', D. N.,
 IVANGVA, T. P., TRACHIK, V. P., and PROMUROV, A. V.

"Using Optical-Electronic Converters Using MOS Photovaricaps in
 Dosimetric Equipment"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 5, 1971,
 pp 103-113

Abstract: An investigation is made of the basic characteristics of a new type of semiconductor voltage modulator used as the active element in a surface metal oxide semiconductor photovaricap. This paper is thus a sequel to two earlier articles (Alektronnaya tekhnika, Series 2, 1967, 1, 96, and Radiotekhnika i elektronika, 1967, 12, 1, 76) written by the same authors, which dealt with the theoretical analysis of the physical phenomena determining the operation of MOS varicaps of the optical variety, and the experimental results of research into their characteristics. The experiments described in the present paper were conducted with p-type silicon specimens of various resistivities, from 10^2 to 10^4 ohm-cm, the surfaces of which were covered with a thin layer of photoresist. A block diagram of the experimental setup is shown. The results of the experiments are presented in the form of graphs and tables.

TOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikro-
elektronika, No. 5, 1971, pp 108-113

be successfully used in equipment for measuring small constant or slowly varying currents and voltages from high-resistance sources. They are associated with the Semiconductor Institute, Ukrainian Academy of Sciences.

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1/2 007 UNCLASSIFIED PROCESSING DATE--02CCT70
TITLE--ESTERIFICATION WITH ION EXCHANGERS -U-
AUTHOR--(02)-BUGDAJIV, K.A., IVANOVA, T.V.
COUNTRY OF INFO--USSR
SOURCE--RASLO, ZHUK. PROM. 1970, 36(1) 35
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ESTERIFICATION, ION EXCHANGE RESIN, CARBOXYLIC ACID
ESTER/(U)K01 ION EXCHANGE RESIN, (U)K02 ION EXCHANGE RESIN, (U)SDV3 ION
EXCHANGE RESIN, (U)MSF3 ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0335 STEP NO--UR/9085/70/036/001/0035/0035
CIRC ACCESSION NO--AP0111529
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111529

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ESTERIFICATION OF A MIXT. OF SYNTHETIC C SUB5-6 CARBOXYLIC ACIDS (I) WITH ISOAMYL ALC. (II) IN THE PRESENCE OF ION EXCHANGERS KU-1 (III), KU-2 (IV), SDV-3 (V), AND MSF-3 (VI) WAS STUDIED. THE ESTERIFICATION MADE IN THE PRESENCE OF 10 G V OR VI UPON REFLUXING 130 G I WITH 140 G II 7 HR GAVE ISOAMYL ESTERS VII, B SUB10-15 106-32DEGREES, OF I, WHICH HAD A HIGHER PERFUMERY QUALITY THAN VII PREPD. IN THE PRESENCE OF H SUB2 SO SUB4. III AND IV DID NOT EXHIBIT CATALYTIC EFFECT ON THE ESTERIFICATION.

UNCLASSIFIED

1/3 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THERMAL CONDUCTIVITY OF BINARY AND TERNARY SELENIDES OF TRANSITION
ELEMENTS -U-
AUTHOR-(03)-IVANOVA, V.A., ABDINOV, D.SH., ALIYEV, G.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 566-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--THERMAL CONDUCTIVITY, SELENIDE, CHROMIUM COMPOUND, TRANSITION
METAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0867 STEP NO--UR/0363/70/006/003/0566/0568
CIRC ACCESSION NO--AP0118042
UNCLASSIFIED

2/3 '012 UNCLASSIFIED PROCESSING DATE--16OCT70
 CIRC ACCESSION NO--AP0118042
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPOS. BETA CRSE, CR SUB7 SE SUB8, CR SUB2 SE SUB8, NICR SUB2 SE SUB4, VCR SUB2 SE SUB4, AND FECR SUB2 SE SUB4 CRYSTALLIZE IN THE MONOCLINIC B8 STRUCTURE AND ARE DEFECTIVE, WITH ORDERED VACANCIES PRESENT. UPON THE TRANSITION FROM BETA-CRSE TO CR SUB2 SE SUB3 THE VACANCY CONC. INCREASES, WHICH RESULTS IN THE APPEARANCE OF SEMICONDUCTOR PROPERTIES. THE THERMAL COND. OF THE COMPOS. CITED WITHIN THE TEMP. RANGE FROM SIMILAR TO 80-440DEGREESK WAS INVESTIGATED. THE SAMPLES WERE PREPD. BY BRIQUETTING POWDERS UNDER SIMILAR TO 3000 KG-CM PRIME2 AT 200DEGREESC, WITH THE SUBSEQUENT ANNEALING IN VACUUM AT 400DEGREESC FOR 50 HR. THE DATA INDICATE THAT THE LAMBDA SUBTOTAL VALUES DECREASE UPON THE TRANSITION FROM BETA-CRSE TO CR SUB2 SE SUB3 WITH INCREASED CONC. OF THE VACANCIES, BEING PHONON SCATTERING CENTERS. FOR CRSE AND CR SUB7 SE SUB8 THE LAMBDA SUBLATTICE IS ALMOST INDEPENDENT OF THE TEMP.; FOR THE REMAINING COMPOS. THE LAMBDA SUBTOTAL LAMBDA SUBELECTRONIC REMAINS PRACTICALLY CONST. TO SIMILAR TO 300-500DEGREESK, WHEREUPON IT INCREASES WITH THE TEMP. THIS IS CAUSED BY THE INCREASE IN THE ELECTRONIC COMPONENT OF THERMAL COND. THE INCREASE IN LAMBDA SUBLATTICE FOR CR SUB2 SE SUB3, FECR SUB2 SE SUB4, VCR SUB2 SE SUB4, AND NICR SUB2 SE SUB4 IN THE INTRINSIC COND. REGION IS ASSOCD. WITH THE INCLUSION OF HEAT TRANSFER BY BIPOLAR THERMODIFFUSION.

UNCLASSIFIED

3/3 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118042

ABSTRACT/EXTRACT--AFTER TAKING INTO CONSIDERATION ALL THE POSSIBLE MECHANISMS, THE TEMP. DEPENDENCE OF THE THERMAL COND. OF THE COMPOS. STUDIED GIVES A LINE WHICH IS PARALLEL TO THE T AXIS; I.E. WITHIN THE TEMP. RANGE INVESTIGATED IT REMAINS ALMOST CONST. AND HAS LOW VALUES (SIMILAR TO 10 PRIME NEGATIVE 4 CAL-CM SEC DEGREE). THE DETN. OF THE FREE PATH LENGTH OF THE PHONONS FROM HEAT CAPACITY, D., AND SOUND VELOCITY VALUES FOR CRSE (POSSESSING THE HIGHEST LAMBDA SUBLATTICE) GIVES VALUES OF SIMILAR TO 2.5-3 ANGSTROM, I.E. OF THE ORDER OF INTERPLANAR SPACINGS. FACILITY: INST. FIZ., BAKU, USSR.

UNCLASSIFIED

USSR

UDC: 621.34.26

IVANOVA, V. G.

"Nonlinear Phenomena in a Transistorized Frequency Converter"

V sb. Radioelektron. v nar. kh-ve SSSR, Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works) Kuybyshev, 1970, pp 113-117 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D35)

Translation: An investigation is made into cross-modulation and nonlinear distortion of the AM signal envelope as a function of the frequency of the useful and interfering signal. For the analysis, the transistors are represented as inertialess, nonlinear three-terminal networks. It is shown that both nonlinear effects are reduced with increasing frequency of the useful signal. Bibliography of four. N. S.

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1/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--DETERMINING THE PARAMETERS OF A TRANSISTORIZED FREQUENCY CONVERTER

-U-

AUTHOR--IVANJVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 3, 1970, PP 72-76

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--TRANSISTORIZED CIRCUIT, FREQUENCY CONVERTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1287

STEP NO--UR/0108/70/000/003/0072/0078

CIRC ACCESSION NO--AP0123246

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--500CT70

CIRC ACCESSION NO--APC123246

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE Y-PARAMETERS ARE DETERMINED FOR A TRANSISTORIZED FREQUENCY CONVERTER REPRESENTED IN THE SHAPE OF A NONLINEAR, INERTIALESS TRIPOLAR WITH A COLLECTOR AND A RESISTANCE CAPACITANCE DIVIDER CONNECTED TO ITS TERMINALS BY NONLINEAR CAPACITANCE. THE RESISTANCE CAPACITANCE DIVIDER CONSISTS OF THE BASE RESISTANCE AND THE NONLINEAR CAPACITANCE OF THE EMITTER. THEORETICAL AND EXPERIMENTAL RESULTS ARE COMPARED.

UNCLASSIFIED

USSR

UDC 547.63 + 547.562.4:562.1

GITIS, S. S., SEINA, E. N., KAMINSKAYA, E. G., IVANOVA, V. M.,
BELOBRAGINA, V. V., SOBOLKIN, I. M., and KAMINSKIY, A. YA.,
VNIPIIM [All-Union Scientific Research and Planning Institute of
(unknown; possibly Monomers)], Tula, and CHIRUKINA, L. V., VNIIV
[All-Union Scientific Research Institute of Synthetic Fibers]

"p,p'-Bis-(carboxyphenylsulfonyl)-diphenyl Oxide and Some of Its
Derivatives -- Monomers for the Production of Thermostable
Fibers"

Moscow, Khimicheskiye Volokna, No 1, 1971, pp 45-47

Abstract: The article suggests the synthesis of new monomers,
viz. derivatives of p,p'-bis-(carboxyphenylsulfonyl)-diphenyl
oxide, for the production of thermostable polymer materials. A
study of the first stage of the synthesis -- tosylation of di-
phenyl ether -- showed that the process yields two principal
products whose elementary composition corresponds to the general
formula $CH_3 - Ar - SO_2 - Ar - O - Ar - SO_2 - Ar - CH_3$, as well as a
third substance whose composition corresponds to the composition

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USSR

GITIS, S. S., et al., Khimicheskiye Volokna, No 1, 1971, pp 45-47

of the monotosylation product $\text{Ar}-\text{O}-\text{Ar}-\text{SO}_2-\text{Ar}-\text{CH}_3$. The structure of the synthesized products was confirmed by IR and electron spectroscopy, as well as polarography. Fibers based on the resultant monomers are strong and elastic.

a/c

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ALKYL ETHERS OF 3,5,DINITROTHIENOL -U-
AUTHOR--(03)--GITIS, S.S., IVANGYA, V.M., NEMLEVA, S.A.
CCOUNTRY OF INFO--USSR I
SOURCE--USSR, 263,585
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHYL ETHER, ORGANIC NITRO COMPOUND, TRIOPHENE, ALCOHOL,
ORGANIC SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1333 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128740
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128740

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ETHERS, E. G. ME ETHER OF 3,5,DINITROTHIENOL, ARE PREPD. BY TREATING 3,5,DINITRO,2,HALOTHIOPHENE WITH APPROPRIATE ALKALI METAL ALCOHOLATES IN DIOXANE, WITH SUBSEQUENT TREATMENT OF THE REACTION MASS WITH CO SUB2.

FACILITY: ALL UNION SCIENTIFIC RESEARCH AND DESIGN INSTITUTE OF MONOMERS.

UNCLASSIFIED

IVANOVA, V.D.

18960/500002

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(5)

Babenko, K. I., V. N. Ivanova, E. P.
Kazandzhian, M. A. Kularkina, and Yu. B.
Radovish. Nonsteady flow around the leading
section of a blunt body. In: Trudy II

Respublikanskoy konferentsii po aerodinamicheskoy
teorii i masovomu inazhivleniyu. Sektsiya "Aerodinamika

bol'shikh skorostey". Kiyev, Kiyevskiy universitet,
1971, 29-43. (Zhurnal, 5/72, no. 58325)

A numerical solution is given for the problem of supersonic flow around the leading section of a blunt body with a plane of symmetry in incompressible flow. A normalizing system of curvilinear coordinates is used, in which the calculated region has fixed boundaries. A finite-difference method is generalized and developed similar to an established one. The principal variation of the proposed method is associated with calculation of the frontal shock wave and the construction of a well-defined system of difference equations. Finite-difference approximation is employed for the derivatives together with the corresponding equation coefficients. The nonlinear system of difference equations obtained is solved by an iteration method, the complete system being divided into subsystems pertaining to each of the three spatial variables. The indeterminate form of the difference equations on the zero radial line is shown. The algorithm developed is used for the determination of steady supersonic flow around triangular ellipsoids and ellipsoids of revolution. Results of numerical calculations are presented.

USSR

UDC: 533.6.011

BABENKO, K. I., IVANOVA, V. N., KAZANDZHAN, E. P., KUKARKINA, M. A., RAD-
VOGIN, Yu. B.

"Concerning Nonstationary Flow Around the Head Part of a Blunt Body"

Tr. II Resp. konf. po aerogidromekkh., teploobmenu i massoobmenu. Sekts. "Aero-
dinamika bol'sh. skorostey" (Works of the Second Republic Conference on Aero-
hydromechanics, Heat Exchange and Mass Exchange. "High-Velocity Aerodynamics"
Section), Kiev, Kiev University, 1971, pp 29-43 (from RZh-Mekhanika, No 5, May
72, Abstract No 5B325)

Translation: A numerical solution is found for the problem of unsteady flow
at supersonic velocity around the head part of a blunt body which has a
plane of symmetry and is located in a flow of ideal gas. A normalizing system
of curvilinear coordinates is used in which the region to be calculated has
fixed boundaries. A finite-difference method close to the traditional pro-
cedure is generalized and developed (Babenko, K. I., Voskresenskiy, G. P.,
Zh. vychisl. matem. i matem. fiz., 1961, 1, No 6, pp 1051-1060 -- RZhMekh,
1962, 6B123; Babenko, K. I., Voskresenskiy, G. P., Lyubimov, A. N., Pusanov,
V. V., Prostranstvennoye obtekanie gladkikh tel ideal'nykh gazov [Three-

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USSR

BABENKO, K. I. et al., Tr. II Resp. konf. po aerogidromekhn., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev, Kiev University, 1971, pp 29-43

-Dimensional Flow of an Ideal Gas Around Smooth Bodies], Moscow, "Nauka", 1964, RZhMekh, 1965, 4B270K). The main difference of the proposed method involves calculation of the head shock wave and construction of a well-conditioned system of difference equations. A finite-difference approximation is used for the derivatives together with the corresponding coefficients of the equations. The resultant nonlinear system of difference equations is solved by an iteration method, the overall system being broken down into subsystems which relate to each of the three spatial variables. Indeterminacies are discovered in the difference equations which take place on the zero ray. The algorithm which is developed is used for determining stationary supersonic flow around triaxial ellipsoids and ellipsoids of revolution by the method of adjustment. The results of numerical calculations are given. P. I. Chushkin.

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- 12 -

USSR

UDC 615.332 (Cycloserinum). 014.453

SAZYKIN, Yu. O., CHAYKOVSKAYA, S. M., KORCHAGIN, V. B., PANINA, M. A.,
IVANOVA, V. N., BALITSKIY, V. A., and VAYNER, Ye. A., All-Union Scientific
Research Institute of Antibiotics and Institute of Biophysics, Ministry of
Health USSR

"Sterilization of Oxacillin Preparations With Fast Electrons"

Moscow, Antibiotiki, No 10, 1971, pp 933-936

Abstract: Exposure of preparations of the sodium salt of oxacillin in 0.5 g vials to fast electrons (10 Mev) in a linear accelerator at a dose of 2.5 Mrad resulted in complete sterility of the antibiotic, whereas, tests of control (nonirradiated) vials revealed contamination in every second or third vial. The induced radioactivity of the samples did not exceed $3.7 \cdot 10^{-10}$ curie even with minimum length of exposure. The procedure had no effect on the antibiotic activity, pharmacological activity (no evidence of toxicity or pyrogenicity) or physicochemical properties of the preparations.

1/1

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1/2 022 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--PROPERTIES OF HIGH ALUMINA CERAMIC MATERIALS -U-
AUTHOR--(02)-IVANOV, V.P., YARMOLINSKAYA, L.N. I
COUNTRY OF INFO--USSR
SOURCE--KHIM. NEFT. KASHINSTR. 1970, (1) 20
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM OXIDE CERAMIC, MAGNESIUM OXIDE, CHROMIUM OXIDE,
SILICON DIOXIDE, MECHANICAL STRENGTH, THERMAL CONDUCTIVITY, COMPRESSIVE
STRENGTH/(U)22KHS HIGH ALUMINA CERAMIC, (U)A995 HIGH ALUMINA CERAMIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FRAME--1992/1507 STEP NO--UR/0314/70/000/001/0020/0020

CIRC ACCESSION NO--AP0112501
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0112501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECH. ALUMINA WAS USED AS THE BASIS FOR 2 HIGH ALUMINA CERAMICS: 22KHS (95PERCENT AL SUB2 O SUB3, BALANCE MN, CR, AND SI OXIDES) AND A995 (99PERCENT AL SUB2 O SUB3, BALANCE MOO); AFTER THE FINAL FIRING, 22KHS CONTAINED 10PERCENT OF A VITREOUS PHASE WHILE A995 CONTAINED NO VITREOUS PHASE. BOTH CERAMICS HAD A HIGH MECH. STRENGTH (E.G. THE BENDING STRENGTH REACHED 4500 KG-CM PRIME2), HIGH HARDNESS (9.5 MOHS SCALE) RELATIVELY HIGH THERMAL COND. (30 TIMES 10 PRIME NEGATIVE3 AND 45 TIMES 10 PRIME NEGATIVE3 CAL-(CM. DEGREE SEC) FOR 22KHS AND A995 RESP.), COMPRESSIVE STRENGTHS LARGER THAN 20,000 KG-CM PRIME2, LOW WATER ABSORPTION (SMALLER THAN OR EQUAL TO 0.02PERCENT), AND HIGH RESISTANCE TO THERMAL CYCLING (I.E., HEATING TO 350DEGREES FOLLOWED BY COOLING IN RUNNING WATER). THE SAMPLES WERE BOILED FOR 3 HR IN 10PERCENT HCL, 10PERCENT H SUB2 SO SUB4, AND 10PERCENT HA SUB2 CO SUB3 SOLNS.; THE WT. LOSSES WERE: FOR 22KHS 118, 74 AND 21 MG-DM PRIME2 FOR A995 8.7, 5.1 AND 2.7 MG.-DM PRIME2, RESP.

UNCLASSIFIED

1/2 035

UNCLASSIFIED

PROCESSING DATE--18OCT70

TITLE--MEASUREMENT OF THE ELECTRON CONCENTRATION OF THE IONOSPHERE BY THE
HIGH FREQUENCY IMPEDANCE PROBE METHOD -U-

AUTHOR--(04)-KOMRAKOV, G.P., IVANOV, V.P., POPKOV, I.V., TYUKIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHEKIE ISSLEDOVANIYA, VOL. 8, MAR-APR 1970 P. 278-283

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ELECTRON DENSITY, IONOSPHERE, HIGH FREQUENCY, ANTENNA,
VERTICAL SOUNDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BRIEF DESCRIPTION OF THE EQUIPMENT USED FOR MEASURING THE ELECTRON CONCENTRATION IN THE IONOSPHERE BY THE HIGH FREQUENCY IMPEDANCE PROBE METHOD. USING THE EQUIPMENT DESCRIBED, THE ELECTRON CONCENTRATION IN THE IONOSPHERE IS DETERMINED BY MEASURING CHANGES IN ANTENNA CAPACITANCE AS A FUNCTION OF CHANGES IN THE DIELECTRIC CONSTANT OF THE IONOSPHERE AT TWO FIXED FREQUENCIES. THE ELECTRON CONCENTRATION PROFILE AT ALTITUDES FROM 80 TO 170 KM, OBTAINED WITH THE AID OF THIS EQUIPMENT, IS PRESENTED.

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IVANOVA, V. S., KOP'YEV, I. M., BOTVINA, L. R., and SHERMERGER, T. D.

Uprochneniye metallov voloknami (Strengthening Metals with Filaments), Moscow, "Nauka," 1973, 206 pp

Translation of Annotation: The book summarizes the results of experimental investigations and examines theoretical questions. Coefficients are calculated for elasticity in heterogeneous systems, features are shown of deformation and breakdown of composite materials and of the performance of these materials and of the performance of these materials in static, cyclic, and dynamic load conditions. The technology for producing composite materials is considered. The book is intended for researchers and practical workers -- metallurgists, technical engineers, technology innovators, and students at machine building and metallurgical institutions of higher learning. There are 27 tables, 137 illustrations, and 333 bibliographical citations.

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Composite Materials

USSR

UDC 669.71:539.4

IVANOVA, V. S., KON'YEV, I. M., BUSALOV, YU. YE., and YERMISHKIN, V. A., Moscow

"Deformation and Rupture Characteristics of Composite Materials With Work Hardenable and Slightly Work Hardenable Matrix"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

Abstract: Resistance to deformation and rupture of an Mg-Li (8 wt% Li) alloy reinforced with USA steel wire was studied by a stepwise loading method. When the amount of steel wire was 1 volumetric percent, the Mg-Li alloy behaved as a matrix, but when the amount of steel wire was increased to 8-15% the behavior of the alloy was typical for metals with a body-centered cubic lattice. In other words, steel wire (fibers) determined the properties of the alloy. A generalized rupture scheme of the composite material is suggested together with the mechanical rheological model of the material behavior, taking into account the matrix deformation properties. Application of the additivity rule for computation of the parabolic strengthening coefficient of the composite material based on a nonhardenable matrix during deformation makes it possible to plot actual deformation curves of composite materials with different volumetric percentage of matrix. Using the deformation diagrams of the matrix

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IVANOVA, V. S., KON'YEV, I.M., BUSALOV, YU. YE., and YERMISHKIN, V.A., Moscow
Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

fibers and composite material plotted in actual coordinates, it is possible to predict the nature of the fiber rupture and to determine the local deformation within its rupture zone. The parabolic strengthening coefficient, like the elasticity modulus, obeys the additivity rule for composite materials with a low-hardenable matrix.

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USSR

UDC 669:539.3

IVANOVA, V. S., and BOTVINA, L. R., Moscow

"Problem of Strength and Prediction of Mechanical Properties of Metals"

Moscow, Akademiya Nauk SSSR, Izvestiya. Metally, No 6, Nov-Dec 72, pp 26-33

Abstract: A study is made of the behavior of metals from the viewpoint of physical chemistry and solid mechanics, and questions of forecasting these properties are considered. A universal diagram, based on the principal mechanical properties of metal that determine its performance under different conditions of loading, is presented and formulas for the calculation of failure viscosity and strength characteristics are offered. The authors are of the opinion that further experimental data is necessary to substantiate the correctness of the estimated and experimental values of these relationships.

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USSR

UDC: 669.017:539.42

IVANOVA, V. S., KUDRYASHOV, V. G., SHTOVBA, Yu. K. KOPELIOVICH, B. A., Moscow

"Fractographic Study of the Rupture Toughness of Aluminum and Titanium Alloys"

Kiev, Problemy Prochnosti, No 11, Nov 72, pp 25-30.

Abstract: An electron microscope study of the surface of a crack is performed after cyclical deformations of various Al alloys and Ti alloys under pure bending with constant and gradually increasing stress, pure circular bending, repeated extension and cantilever circular bending. It is shown that the dimensions of the pits on the crack surface near hard second-phase particles correlate with the value of H_{T_s} (change in heat content of base of alloy with changing temperature from room temperature to the melting point). It is also established that the rupture toughness determined by the method of Ivanova and Kudryashov, under conditions of cyclical loading at the critical fatigue stress, is near the rupture toughness produced by the method of Irwin.

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USSR

UDC 669.14:539

IVANOVA, V. S., KUDRYASHOV, V. G., DERYAGIN, G. A., SHTOVA, YU. K.,
Institute of Metallurgy, Academy of Sciences USSR, Moscow

"Comparison of the Breakdown Viscosity K_{1c} of Aluminum (AK4-IT1, V95T1, D16T) and Titanium (VT8, VT9) Alloys Under Static and Cyclic Loads"

Kiev, Problemy prochnosti, No. 5, May 72, pp 29-35

Abstract: Aluminum and titanium alloys were studied to determine the breakdown viscosity of structural materials both under static (K_{1c}^s) and under cyclic (K_{1c}^c) loading and also to show the optimal conditions for fatigue tests when $K_{1c}^s = K_{1c}^c$. It is noted that the problem of brittle fracture of materials is now receiving much attention and that a new breakdown characteristic K_{1c} , the breakdown viscosity of the material under plane deformation conditions, which characterizes the residual strength of material in the presence of cracks, has been introduced into calculations in connection with large-scale metal structures. It is difficult to determine the breakdown viscosity K_{1c} of materials of medium strength, such as

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IVANOVA, V. S., et al, Problemy prochnosti, No. 5, May 72, pp 29-35

- structural aluminum alloys, according to linear breakdown mechanics; this requires tests of samples of extremely large dimensions and hence it is important to study the possibility of determining K_{Ic} on the basis of fatigue tests of samples by a method proposed previously by Ivanova and Kudryashov. This avoids many difficulties associated with tests under static loading, such as the application of sharp cuts, the growth of fatigue cracks, and assuring conditions for plane deformation. Pressed profiles of cross section 60×80 and $65 \times 200 \text{ mm}^2$ and bars of diameter 18 mm of AK4-1T1 alloy, pressed plates of cross section $35 \times 250 \text{ mm}^2$ of V95T1 alloy and rods of diameter 18 and 60 mm of V95T1 alloy, pressed plates of cross section $42 \times 250 \text{ mm}^2$, a panel of thickness 38 mm and rods of cross section $50 \times 60 \text{ mm}^2$ and of diameter 18 mm of D16T alloy, pressed rods of diameter 18 mm of D1T, AVT1 and AMg6 alloys, pressed profiles of titanium alloys VT8 and VT9 and rods of diameter 35 mm of VT9 alloy in the annealed state were investigated. It was found that materials can be evaluated from the aspect of breakdown viscosity on the basis of fatigue tests and that the form of the load, the cycle and the load spectrum do not play a considerable role. The only condition for the best convergence of estimates of K_{Ic}^u and K_{Ic}^c is that the stress correspond to the critical fatigue stress. Analysis of test data on fatigue under bending and stretching of cylindrical samples of the aluminum and titanium alloys showed that the breakdown viscosity K_{Ic}^u under static loading as

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determined by the Irwin method and the breakdown viscosity K_{fC}^C under cyclic loading as determined by the Ivanova and Kudryashov method are close to one another at the critical fatigue stress. It was also shown that it is possible to determine K_{IC}^C at high temperatures on the basis of fatigue tests of samples using the relationships of linear mechanics considering the length of the fatigue crack.

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USSR

UDC 539.4:526.453

IVANOVA, V. S., FRIDMAN, E. G., GVOZDYK, V. G.

"Study of the Macromechanism of the Breakdown of Copper Reinforced With Tungsten Wire Using High Temperature Metallography"

V sb. Novyye napravleniya razvitiya vysokotemperaturn. metallogr. (New Trends in the Development of High Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye", 1971, pp 144-147 (from *RZh-Mekhanika*, No 12, Dec 71, Abstract No 12V1554)

Translation: The results of a study of the macromechanism of the breakdown deformation of copper reinforced by a grid and one-directional wires using high-temperature metallography are presented. It is shown that reinforcement of the copper with a grid is more effective in comparison to reinforcement with unidirectional wires from the aspect of resistance to high-temperature deformation. Authors' abstract.

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